Physics of the Solid State 1998 vol.40 N11, pages 1833-1835

Effect of Mo3+ ions on Nd3+ spin-lattice relaxation in Y3Al5O12

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Abstract

The content of Mo3+ ions in YAG:Nd garnet samples prepared by different technologies has been studied, and the spin-lattice relaxation rate of these ions at temperatures of 4-5 K measured. It is concluded is drawn that Mo3+ ions can play the part of rapidly relaxing centers mediating the Nd3+ spin-lattice relaxation at liquid-helium temperatures. This may account for a number of features in the spin-lattice relaxation of rare-earth ions in garnets, observed earlier at low temperatures. © 1998 American Institute of Physics.